IDEX II

IDEX II
IASS
Prototyping

Overview

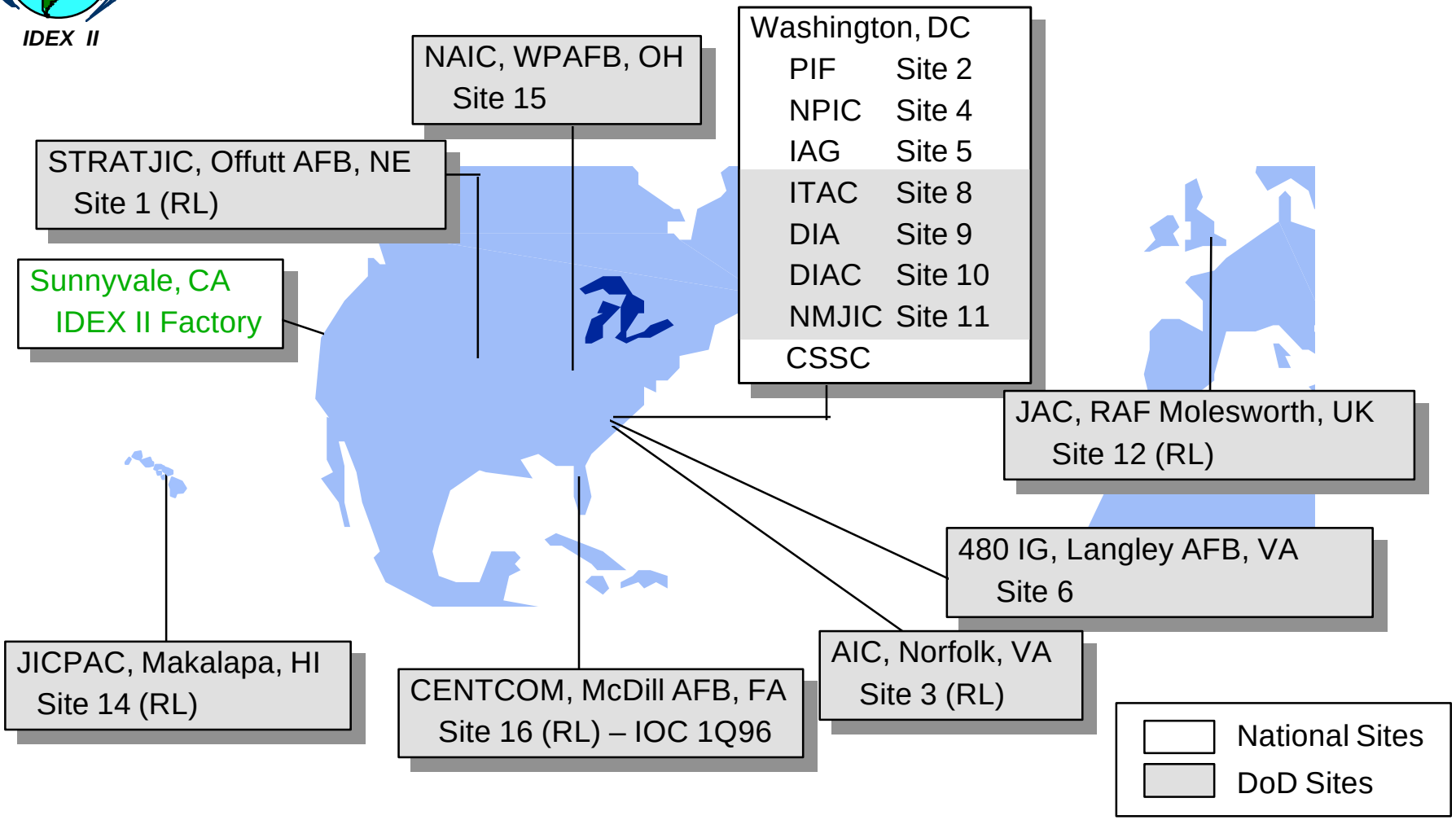
Plans

John Files 20 November 1996

GOALS

- The IDEX program is being migrated to a more open architecture.
  - Custom hardware is being replaced with commercial equipment.
  - External interfaces to the image archive are being provided to access raw, reformatted and partially processed image data.
- External interfaces should be standardized.
  - Lockheed Martin has been actively supporting the development of the Image Access Services Specification and Common Imagery Interoperability Profile for Imagery Access.
  - We are working with our customer to provide a prototype server implementation and test bed as well as clients based on systems developed at Sunnyvale, Valley Forge and Gaithersburg facilities.

IDEX II Worldwide Locations



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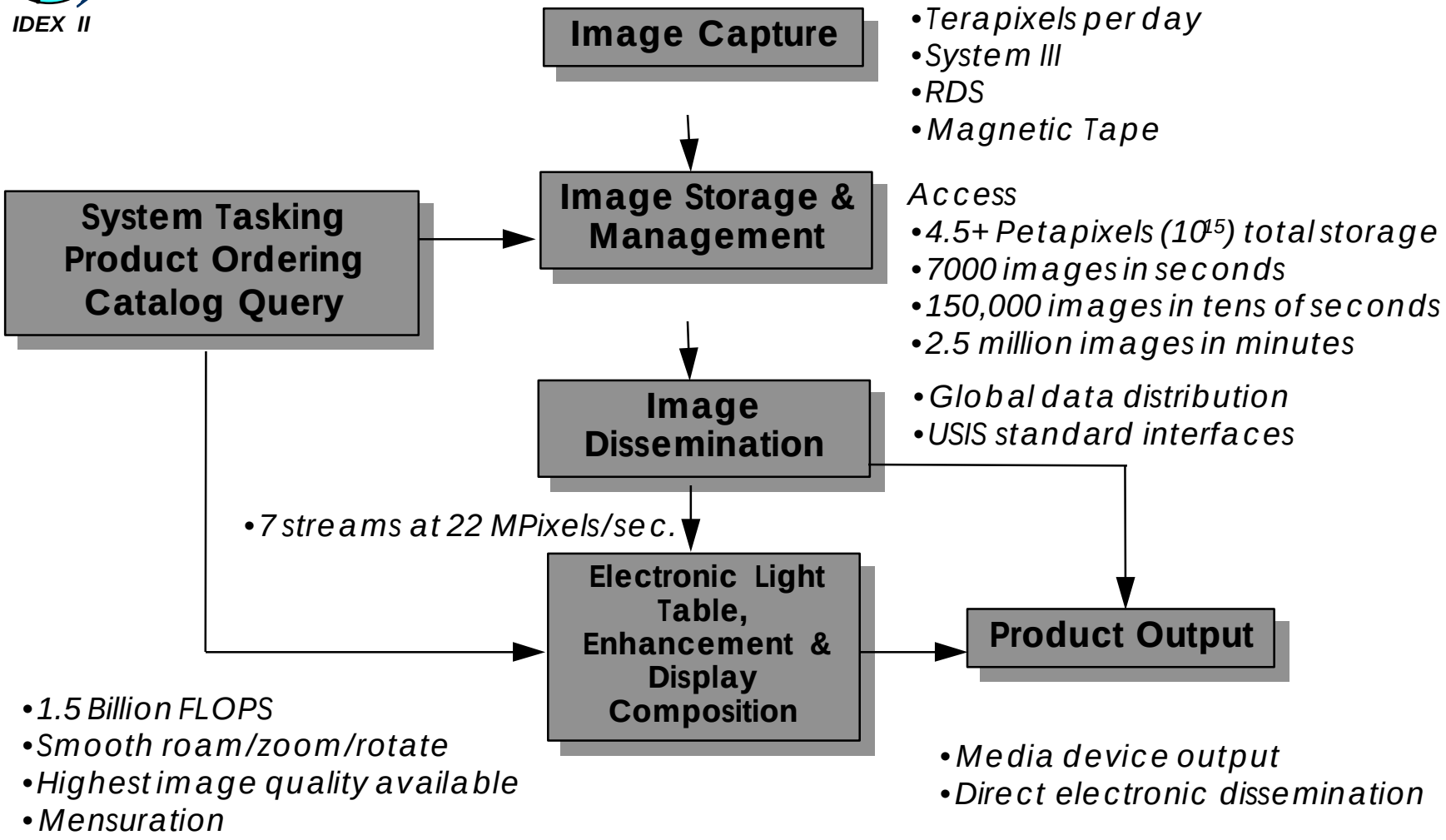
IDEX II Site



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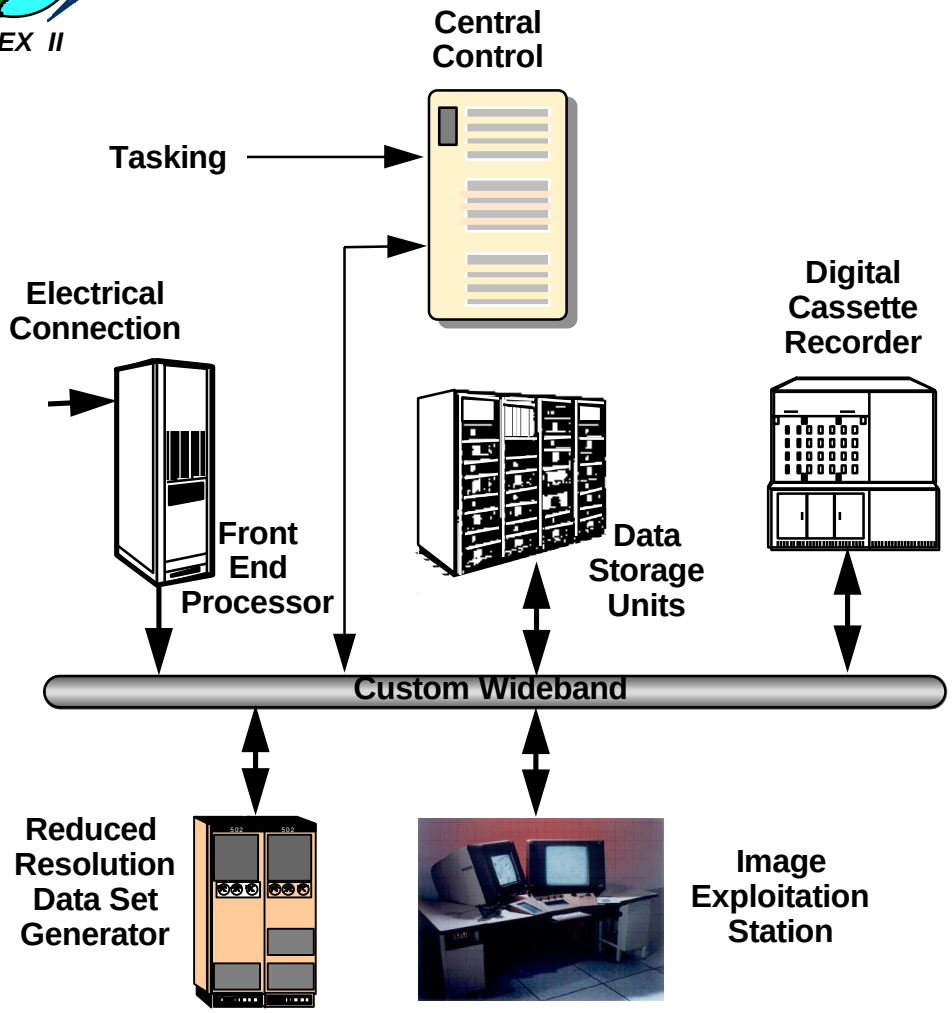
IDEX II Architecture 1990



Characteristics

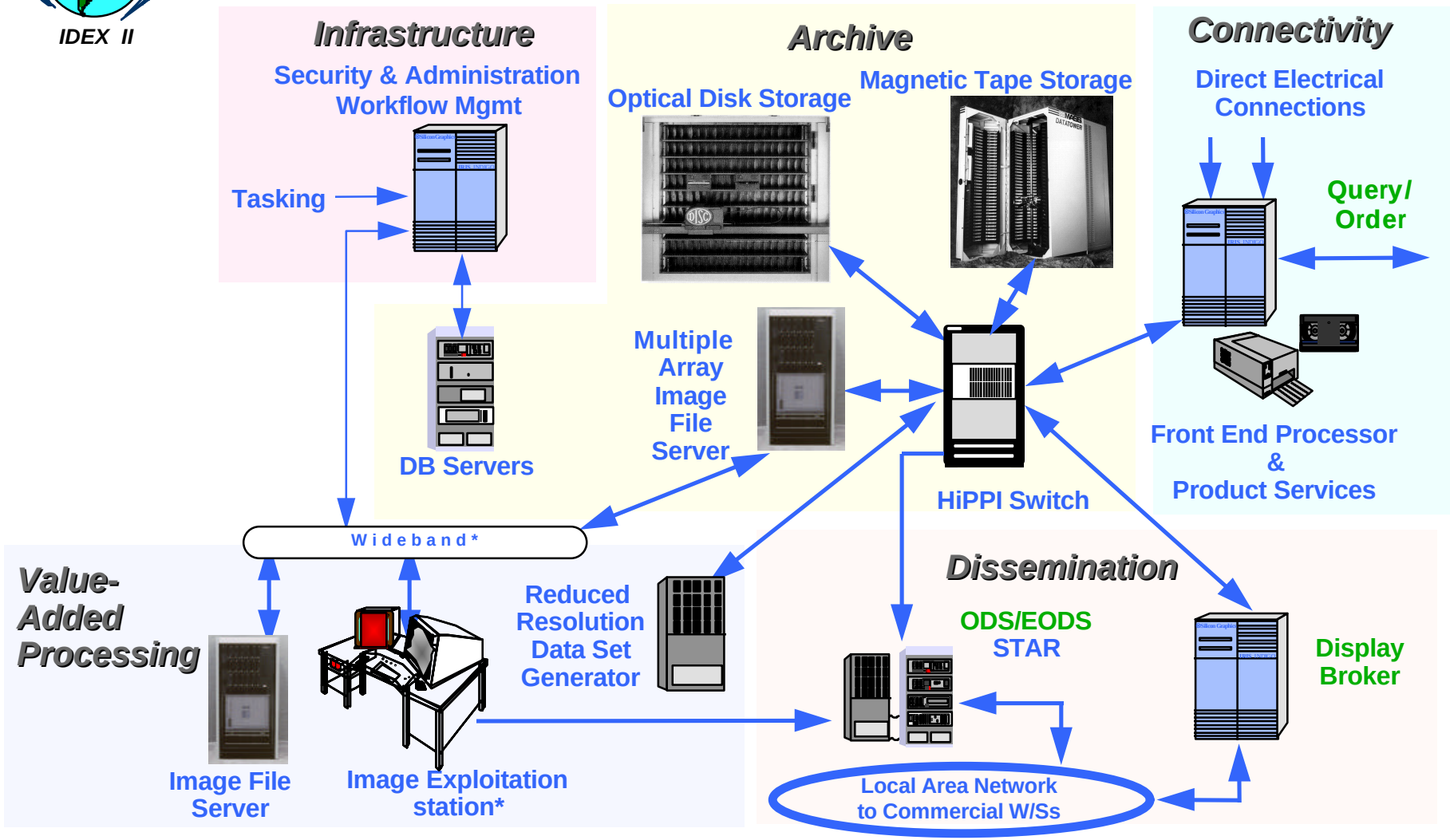
- High speed processing
  - Custom PWAs with COTS components
  - Custom image processing and control software
  - Complex image processing algorithms
- High speed custom networks
- Modular/scaleable design permits site-specific customization

Strict timeline and image quality requirements drove a high-performance /custom design.

EVOLUTION

- As performance of commercial equipment has improved, IDEX has migrated away from custom implementations.
  - Wideband network replaced with HiPPI
  - Hardware compression and expansion replaced with software.
- IDEX Archive has been opened up
  - Access to image files through Output Data Server
  - Access to image pixel arrays through Display Broker
  - Database query and ordering through Site to Site transfer
- Current access is through a mixture of custom and standard interfaces. Support of IAS Specification will mean standardized interfaces are provided.

IDEX II CURRENT ARCHITECTURE



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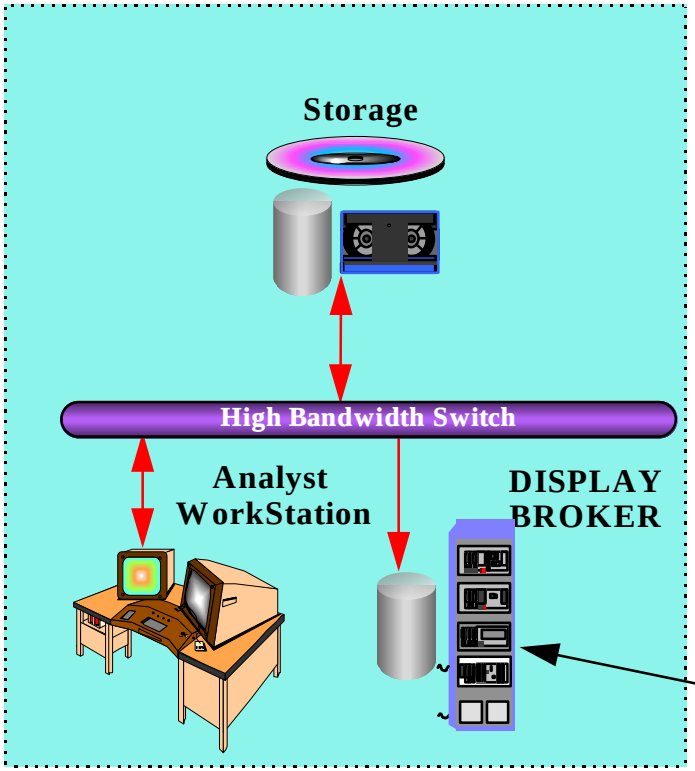
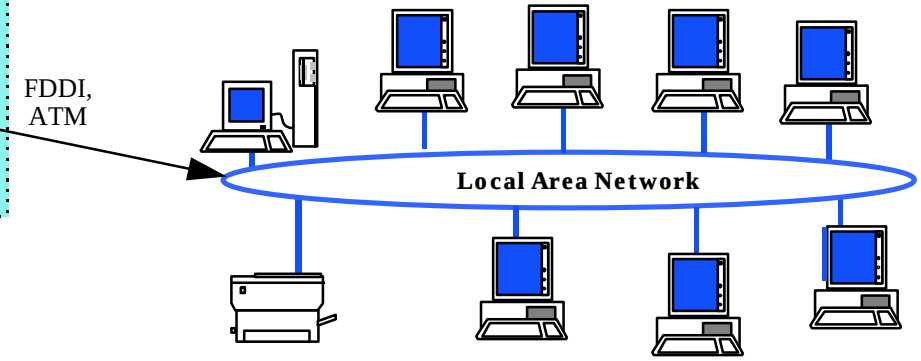
IDEX II Connectivity Options

Display Broker Supports Array Access



- COTS Server, with the IDEX IES algorithms implemented in standard S/W
- Application Programmers Interface (API) published to allow COTS ELT packages to interface with the IDEX archive
- Customer LANs used (FDDI,ATM)
- Operation with ELT packages shown at IDEX Customer Forum in October.
- Existing API will be wrapped to provide IASS Array Access



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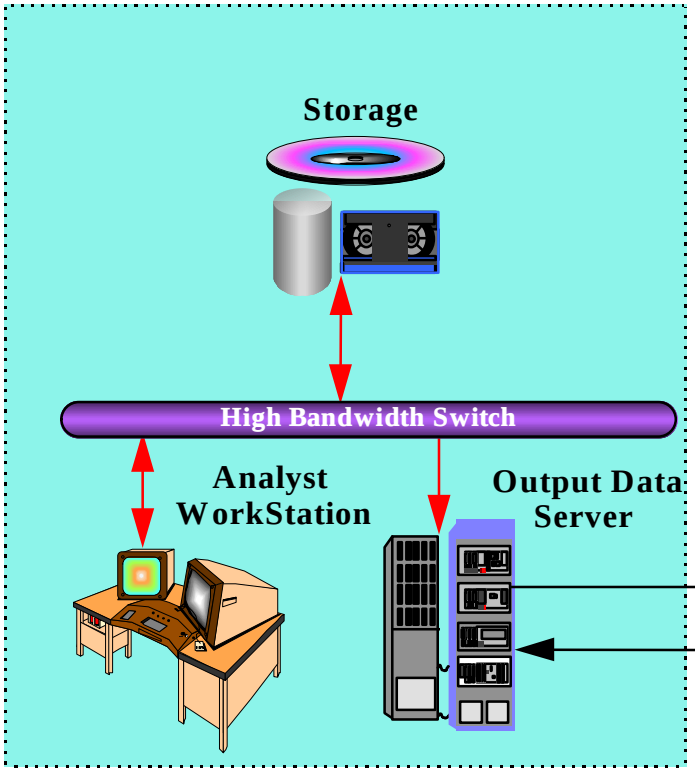
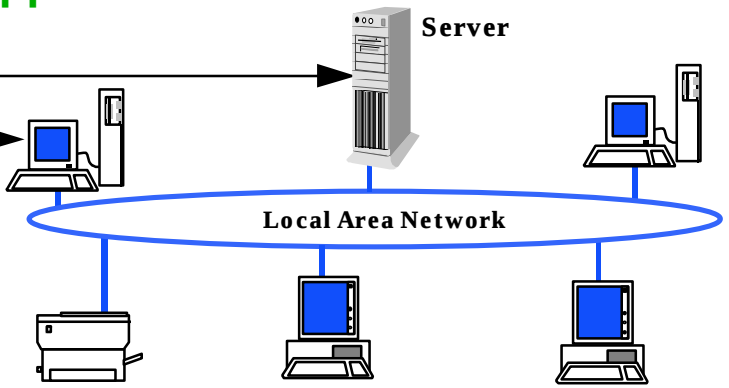
IDEX II Connectivity Options

Output Data Server (ODS)
Provides Image and Subimage Output



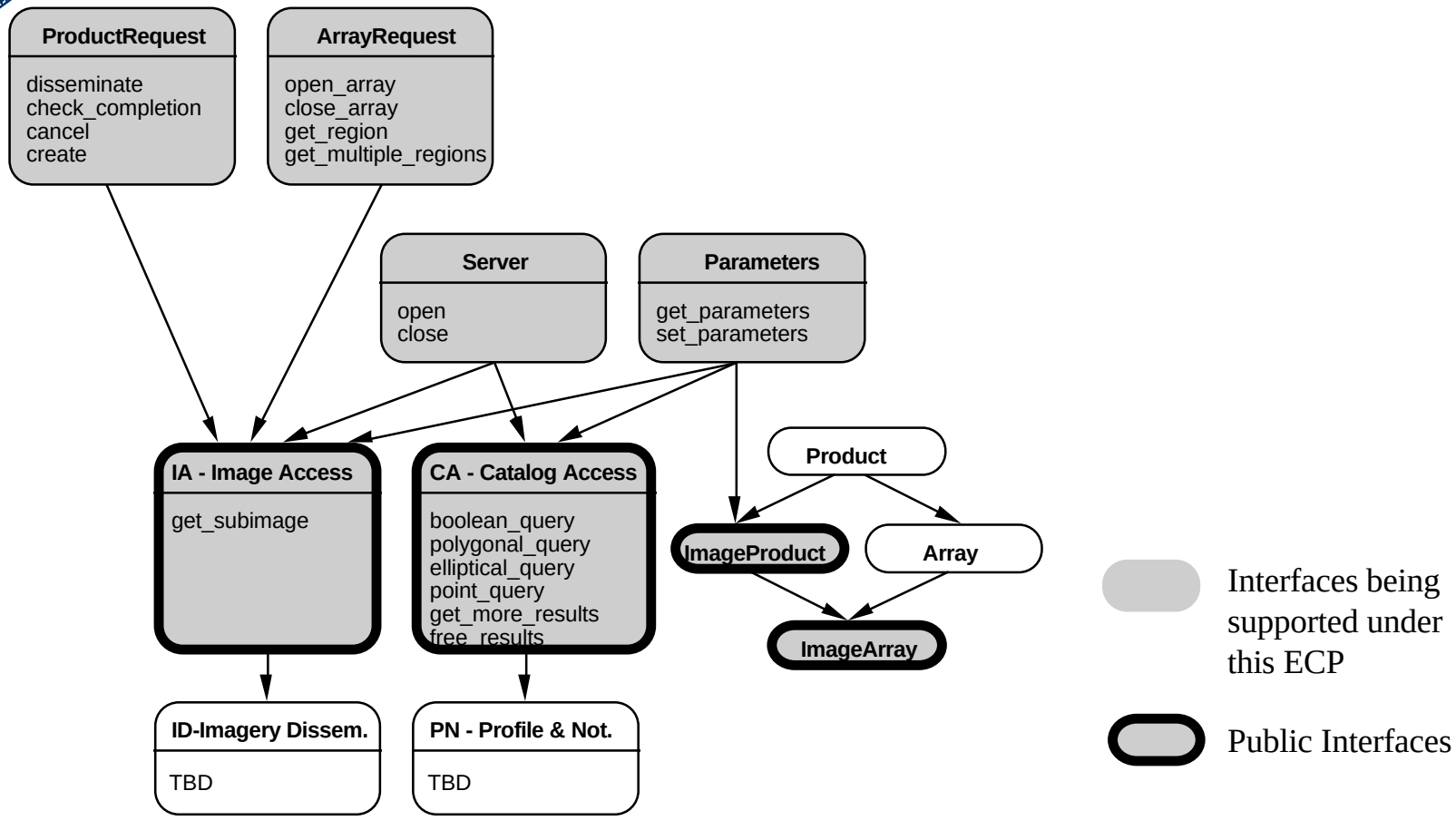
- USIS compliant interface
  - NITFS 2.0 Uncompressed
  - 8 or 16 Bit
  - Single block or full image
- Other formats supported
  - TFRD, TIFF, DotLAN, Raster, CVL
- 1 or 2 FDDI or ATM connections
  - ODS drives at T3 rates
  - Enhanced ODS drives at OC 3 rates
- Current MMI augmented with API for IASS support.



IASS 1.0 Prototype Implementation

- **IDEX Contractor is proposing to**
  - **Develop a prototype server implementation to IASS 1.0.**
  - **Use a CORBA compliant ORB to implement the API interface.**
  - **Provide a testbed at the IDEX factory for interface evaluation in April 1997.**
  - **Participate in the interface evaluation and support updating IASS 1.0 to 2.0.**

IASS Interfaces to be Prototyped



The Image Access Services Interface Hierarchy
[This hierarchy illustrates the commonality and specializations in interface architecture—arrows indicate specification inheritance]

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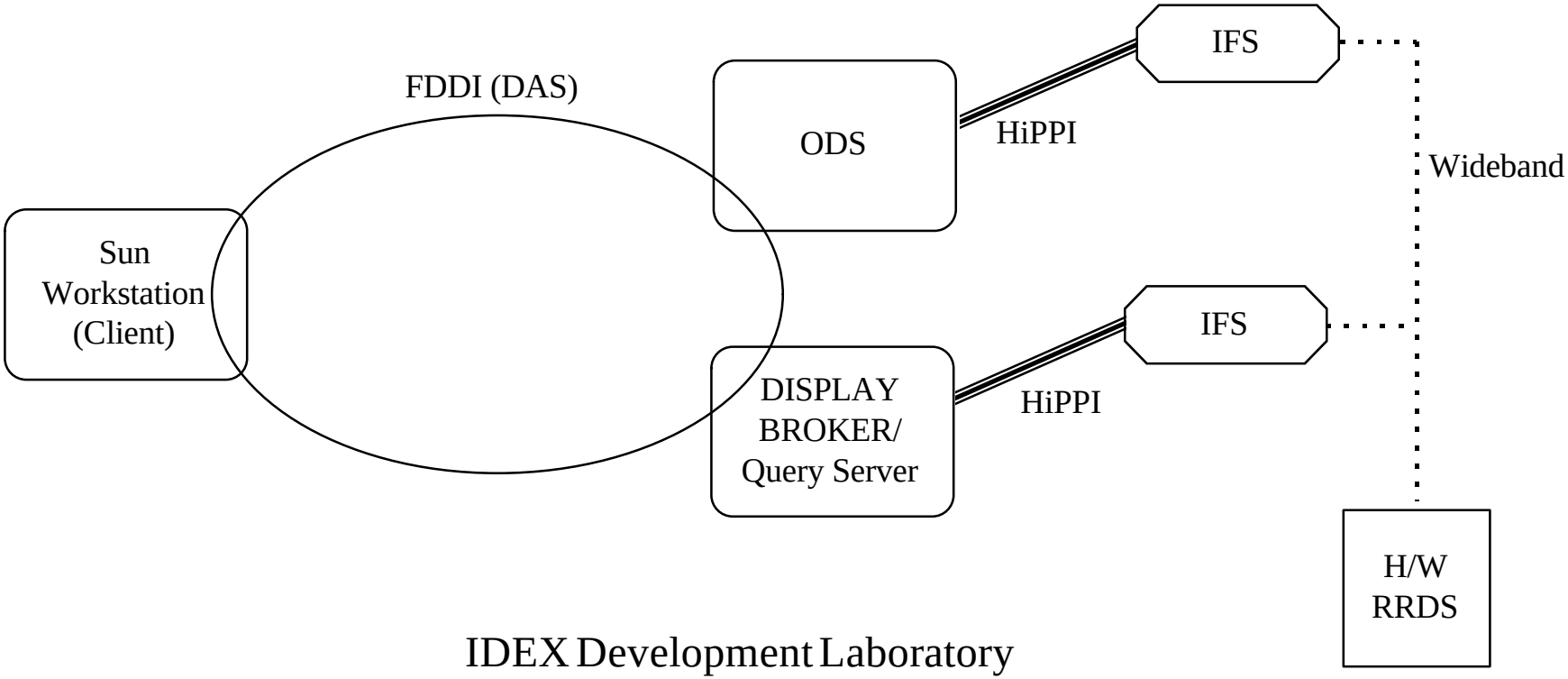
Prototype Implementation Evaluation Facility



IDEX Development Laboratory